IN THE CLAIMS

The below listing includes all claims in the application, and replaces all prior listings.

1. (currently amended)A method of characterizing a display having an arbitrary monotonic transfer function, comprising:

   a. generating ~~an inverse of~~ an approximating spline through a plurality of control points using the steps of:

      1. providing at least two known control points, wherein each control point has a display input value;

      2. fitting a spline through ~~existing~~ the known control points;

      3. creating a test point candidate list from combinations of the control points, wherein each test point candidate has a display input value, and has at least two parents selected from the known control points;

      4. selecting a test point from the test point candidate list, and displaying the test point on a display;

      5. generating a visual test pattern ~~with~~ on the display using the test point's parents;

      6. performing a visual comparison at the selected test point by adjusting the display input value of the test point until a perceptual match is made between the displayed test point and the displayed visual test pattern;

      7. accepting an adjusted test point as a new known control point; and

      8. repeating steps 2 through 7 at least once for further refinement of the approximating spline. ~~spline;~~

2. (currently amended)   The method of claim 1 wherein the ~~initial~~ display input

value of ~~step 6~~ <u>each test point</u> is estimated by interpolating the value of the

approximating spline at the test input value.

3. (currently amended)The method of claim 1 wherein ~~the~~ <u>an</u> adjustable range of the

display input value of the test point in step 6 has a lower limit of the display input

value of the control point whose test input value is closest to the test input value of the

test point without being greater than the test input value of the test point, and has an

upper limit of the display input value of the control point whose test input value is

closest to the test input value of the test point without being less than the test input

value of the test point.

4. (original)   The method of claim 1 wherein a user selects a test point candidate from the

test point candidate list.

5. (original)   The method of claim 1 wherein test point candidates are culled from the test

point candidate list to reduce the number of test point candidates.

6. (original)   The method of claim 1 wherein, when two test point candidates coincide,

the test point candidate with the parents furthest apart is chosen.

7. (original)   The method of claim 1 wherein a test point candidates may only be selected

from a pre-determined test point candidate list.

8. (original) The method of claim 1 wherein a sequence of test points is pre-determined.

9. (currently amended)The method of claim 1 wherein the steps are repeated for each of ~~the~~ at least two color channels of the display device.

10. (original) The method of claim 9 wherein the color channels of the display device are red, green and blue.

11. (currently amended)   The method of claim 1 wherein the characterizing is performed simultaneously for all ~~of the~~ color channels of the display device by:

      a. adjusting ~~the~~ luminance level and chrominance values; and

      b. converting ~~these~~ the luminance level and chrominance values to changes in each color channel.

12. (original) The method of claim 11 wherein the color channels of the display device are red, green and blue color channels.

13. (currently amended)   The method of claim 1 wherein one of ~~first~~ the known control points corresponds to the darkest display input value.

14. (currently amended)   The method of claim 1 wherein one of ~~first~~ the known control

points corresponds to the lightest display input value.

15. (currently amended)   The method of claim 1 wherein two of ~~first~~ the known control

points correspond to the darkest display input value and the lightest display input

value.

16. (original) The method of claim 1 wherein the candidate test point list is created from

combinations of control points whose test input values have been have been quantized

to realizable discrete values and the display input values of the control points

corresponding to these discrete values have been interpolated along the approximating

spline.

17. (original) The method of claim 1 wherein, in step 6, the comparison of the test point

is made using a hardware device capable of relative comparisons.